Application No. 10/550118
Response to the Office Action dated September 12, 2008

REMARKS

Favorable reconsideration of this application is requested in view of the following remarks.

Claims 1, 3, and 5 have been amended to clarify that the encoder correction ROM has a function to store a previously measured swing scanning angle and output the previously measured and stored swing scanning angle as supported by the specification at page 4, line 18 – page 5, line 4, page 11, line 28 – page 12, line 4, and page 14, line 9-11. Also, claims 1, 3, and 5 have been amended to clarify that the claim is a product claim by using the word "element" instead of "means.

Claims 1-6 have been objected to because of informalities. Claims 1, 3, and 5 have been amended to remove the word "outside". These claims also have been amended to use a "previously measured" swing scanning angle instead of "an actual swing scanning angle" and to clarify that the encoder correction ROM stores the previously measured swing scanning angle and outputs the stored swing scanning angle. Thus, claims 2, 4, and 6 that claim a particular type of count value stored in the encoder correction ROM, and these claims are clear. Accordingly, this objection should be withdrawn.

Claims 1, 3, and 5 have been amended to clarify that the claim is a product claim by eliminating the word "means". Applicants do not concede the correctness of this objection.

Claims 1-6 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al. (U.K. Patent Application publication No. GB 2,216,660) in view of Pini (U.S. Patent No. 5,159,931). Applicants respectfully traverse this rejection.

Yamamoto discloses a method of correcting an ultrasonic image electronically by eliminating a positional shift of an ultrasonic picture image caused by backlash (see page 2, first para. under Summary of the Invention). Yamamoto further discloses that the

positional shift of the image, i.e., the shifts between a' and b' of Fig. 2(b), is eliminated by adding the correction signal, which is determined by observing the monitor and changing the value of the correcting signal until the two images coincide with each other, from the encoder (see Figs. 2(b) and 2(b), page 6, para. 1, lines 4-14, page 7, second para., and page 8, second para. lines 3-15). In Yamamoto, the correction signal can be obtained only after two images have been obtained (see page 7, last para. line 1 to page 8, line 5). Accordingly, Yamamoto fails to disclose an encoder correction ROM that outputs the previously measured and stored swing scanning angle corresponding to each count value obtained by counting pulses from the rotary encoder and outputs the previously measured and stored swing scanning angle as claims 1, 3, and 5 require. By using the stored swing scanning angle corresponding to each count value obtained by counting pulses from the rotary encoder as claims 1, 3, and 5 require, the encoder correction ROM can store different correction data for a forward path and for a return path and as a result, the ultrasonic probe can solve a problem of forming different three-dimensional images and distortions of the three dimensional images for the forward and return paths (see page 13, line 19 – page 14, line 3 of the specification). In addition, by using the stored swing scanning angle corresponding to each count value, the ultrasonic probe can form an image while correcting each encoder count value and can provide a more precise three-dimensional image of a tissue in a living body (see page 15, lines 14-19 of the specification). Accordingly, claims 1, 3, and 5 are distinguished from Yamamoto.

Pini discloses an apparatus for obtaining a tree-dimensional image by using outputs from two counters, i.e., a counter for rotation scanning and a counter for sectorial scanning (see Fig. 6 and coln. 8, lines 58-55) and fails to disclose that the encoder correction ROM stores previously measured and stored swing scanning angle of the ultrasonic transducer corresponding to each count value obtained by counting pulses from the rotary encoder and outputs the previously measured and stored count value as claims 1, 3, and 5 require. Thus, Pini does not remedy the deficiencies of Yamamoto, and claims 1, 3, and 5 are distinguished from Yamamoto in view of Pini. Accordingly, this rejection should be withdrawn.

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In view of the above, Applicants request reconsideration of the application in the form of a Notice of Allowance.

Respectfully submitted,

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